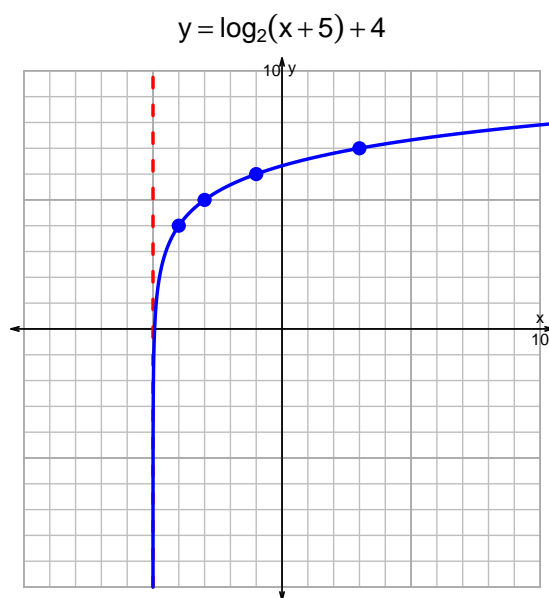
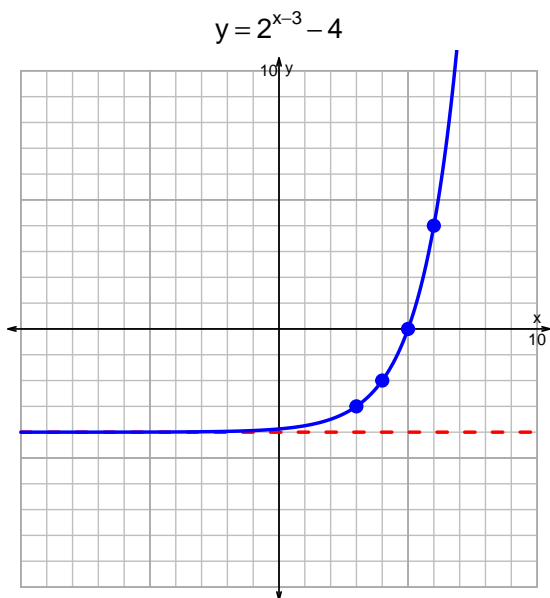


Name: \_\_\_\_\_

Date: \_\_\_\_\_

## s18QUIZ: EXP LOG (SLTN v287)

1. Graph  $y = 2^{x-3} - 4$  and  $y = \log_2(x+5) + 4$  on the grids below. Also, draw any asymptotes with dotted lines.



2. Write (but do not evaluate) the solution to the equation below by writing a logarithmic expression.

$$11 = \left(\frac{3}{4}\right) \cdot 2^{7t/5}$$

Divide both sides by  $\frac{3}{4}$ .

$$\frac{11 \cdot 4}{3} = 2^{7t/5}$$

Take log, base 2, of both sides.

$$\log_2\left(\frac{11 \cdot 4}{3}\right) = \frac{7t}{5}$$

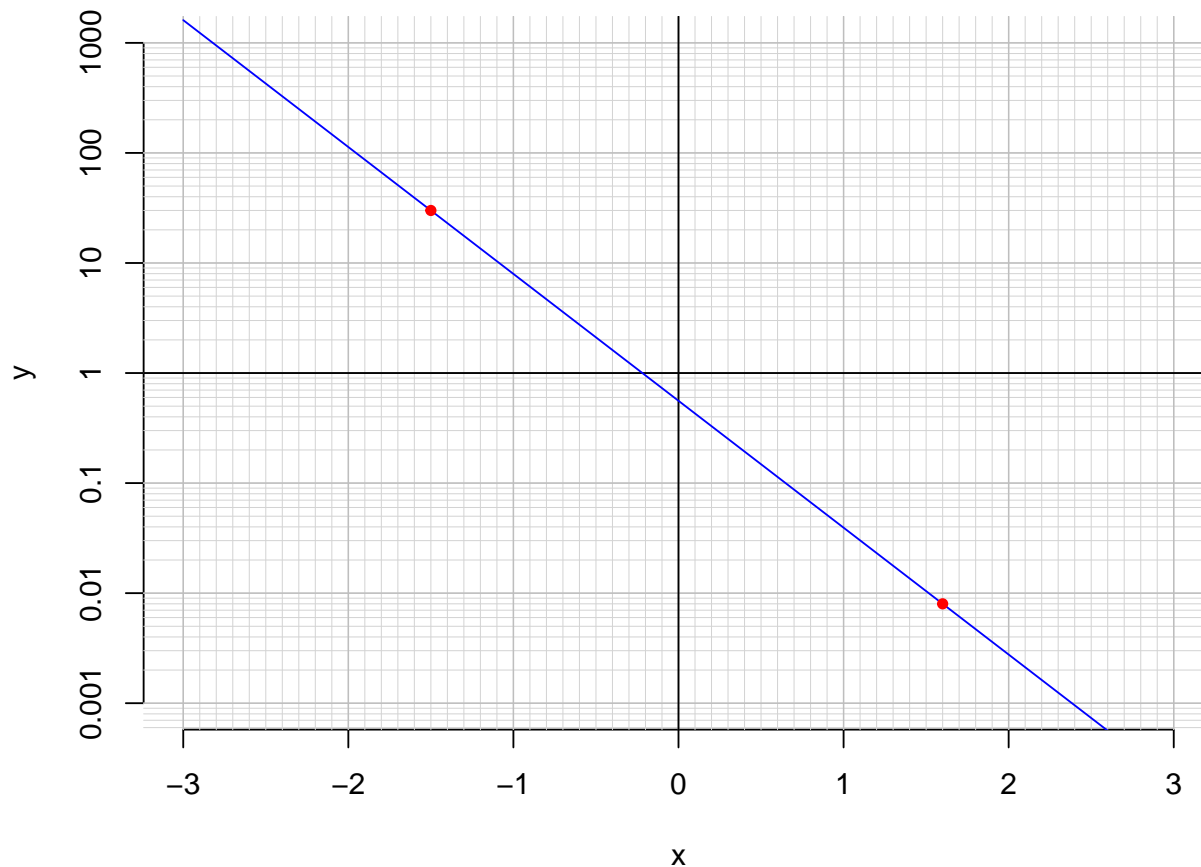
Divide both sides by  $\frac{7}{5}$ .

$$\frac{5}{7} \cdot \log_2\left(\frac{11 \cdot 4}{3}\right) = t$$

Switch sides.

$$t = \frac{5}{7} \cdot \log_2\left(\frac{11 \cdot 4}{3}\right)$$

3. An exponential function  $f(x) = 0.559 \cdot e^{-2.65x}$  is graphed below on a semi-log plot.



- a. Using the plot above, evaluate  $f(-1.5)$ .

$$f(-1.5) = 30$$

- b. Express  $f^{-1}(x)$ , the inverse of  $f$ .

$$f^{-1}(x) = \frac{-1}{2.65} \cdot \ln\left(\frac{x}{0.559}\right)$$

- c. Using the plot above, evaluate  $f^{-1}(0.008)$ .

$$f^{-1}(0.008) = 1.6$$